THE CHANGE IN TRUST POLICY — II*

V

WE have seen that there exists no sound legal basis for the judicial policy of distinguishing between "good" and "bad" trusts. It remains to inquire whether this new public policy may not, however, be industrially sound. If there is an economic basis for the changed attitude toward business enterprise, we may very well overlook the lack of legal precedent and find satisfaction in the ease with which our legislative wants are recognized and filled by the courts. The question is, therefore, whether the law as interpreted in the Steel Corporation case is likely to promote "prosperity" not only in the narrow sense of profit-making but also in the sense of the general welfare of society. During the last twenty years this question has been much discussed both pro and con, and the defenders of the economic expediency and social legitimacy of good industrial trusts have not been confined to the business community. They may be found in plenty among professional economists, supposedly disinterested. It will not do in this place to recount all the arguments for either side, but it may nevertheless be worth while to examine specifically the records of two important combinations, — The United States Steel Corporation and the International Harvester Company, the continuance of which has been sanctioned [1] by the courts under the new policy. What is

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* The first installment of this article appeared in 35 Harv. L. Rev. 815.

[1] The International Harvester Company, it is true, was found by the lower court to be an unlawful combination under the Sherman Act (214 Fed. 987 (1914)). This was in 1914, and an appeal was then taken to the Supreme Court. The case was twice argued, and then continued on motion of the government, which feared the consequences of dissolution and extensive financial reorganization during the war. Finally the Atterney-General was induced under these circumstances to enter into an agreement (July, 1918). by which consent was given to a modification of the dissolution decree of the district court and upon motion of the Harvester Company the appeal was dismissed by the Supreme Court (248 U. S. 587 (1918)). The effect of the substitute decree is to leave the Harvester Company practically untouched in its position of dominance in the industry. See Report of Federal Trade Commission on The Causes of High Prices of Farm Implements (1920), pp. 653–680.

there in the history of the United States Steel Corporation and the International Harvester Company to support the view that a continuation of their concentrated power works in the public interest? Has the carrying on of fifty to seventy per cent of the productive operations in their respective industries by these corporations resulted in a greater benefit to our industrial society than would have resulted from the early restoration of their constituent elements to their original competitive status? This will be a test upon the results of which we may base some conclusion relative to the wider question stated above.

There are three sets of facts that seem worthy of examination in applying this test. They are: (I) the facts concerning the origin of these corporations; (II) the facts concerning their growth; (III) the facts concerning their consequences. These same classes of facts might be otherwise described as: (I) facts about the constitution of these corporations; (II) facts about their relations to other business units in their respective industries; (III) facts about their relation to the public whom their operations concern. The first two sets of facts bear indirectly upon the primary issue. The last bears directly upon it. The evidence to be gained from the first set of facts is negative and inferential. The evidence offered by the last two sets of facts is positive and inductive. We shall examine them in order.

VI

The United States Steel Corporation was formed by the consolidation of twelve [2] previously independently organized concerns. Although these concerns ostensibly operated independently, there were three large groups of "interests" brought into the corporation, — the Carnegie interests, the Moore interests, the Morgan interests. Each of these comprised units (at one stage or another of the whole productive process of the industry) which were in direct competition with units (engaged in similar stages of the process) controlled by the other groups. The extent of the integration previously accomplished within the several groups varied, but all the groups were to some degree integrated "from the ground up."

[2] This includes three concerns taken in almost immediately following the organization of the corporation and a fourth acquired shortly afterwards.

That is to say, each interest controlled units which furnished other units with at least a part of their raw materials, and also contained certain units which were in some part engaged in making finished steel products and selling them directly to final users or distributors. If we divide up the complete productive process of the industry roughly into three stages: (*a*) the extraction and transportation of raw materials, (*b*) the production of pig iron and its conversion into steel, (*c*) the forming of these materials into finished and semi-finished products, we find that the different interests stood in different relations to the several stages.[3] The Carnegie interests had largely been devoted to the first two stages and had carried their integration to a high degree, *i.e.*, had coördinated their operations in these two branches of the industry fairly closely. The Moore interests included a group of properties very largely devoted to the last two stages and chiefly to the last one. In other words, the degree of coördination between the operations of the Moore units in the third stage and in the second stage was not so high as between the first and second stages in the case of the Carnegie interests. The Morgan interests represented a somewhat better balanced integration of the three stages than either of the other groups. They were not in the (then) center of the steel industry, however, and the magnitude of their operations in all branches combined was not so great as that of either of the other two interests.

It thus appears that the formation of the United States Steel Corporation did not involve in essence an economic integration of the industry, for that had already been marked out as the pathway of development and had been partially achieved. The formation of the corporation involved rather a combination of integrations. These integrations were themselves the product in some instances of consolidations of competing units, notably so in the case of the Moore group.[4] In other instances the integration had come about as the result of a "natural" process of industrial evolution, *i.e.*, expansion by aggressive business competition, as in the case of the

[3] United States Bureau of Corporations, REPORT ON THE STEEL INDUSTRY (1911), p. 100.

[4] *Ibid.*, p. 89: "The National Steel Company . . . was distinctly a combination of previously competing concerns."

Carnegie interests.[5] That economic integration [6] was not greatly furthered by the consolidation [7] of these groups of interests must be manifest from a consideration of their situation. They were geographically so far separated from one another that neither in the transportation of ore nor in the transformation of raw materials into pig, nor in the conversion of pig into steel, nor in the manufacture of the steel into finished forms could considerable economies have been anticipated from joint ownership. There was no possibility [8] of the operations of one supplementing or permitting the closer time coördination of the operations of another to any important degree. The plants of the Chicago district continued to receive their raw material in the same way from the same sources, produce the same grades of iron and steel, and roll the same varieties of finished and semi-finished products as they had theretofore. And the same holds true substantially of the corporation's proper-

[5] Bureau Report (1911), p. 85–86: "The Carnegie Company was the largest single unit in the steel industry. . . . All of its manufacturing properties were concentrated in or near Pittsburg, this compactness of plant being a conspicuous feature of its organization. Its great size had been attained chiefly by the expansion of its own plants, or by the addition of concerns in correlated industries, such as coal and transportation, rather than by the absorption of competitors."

[6] Meaning the linking up of successive processes of production whereby real costs are reduced, usually at least in part through the elimination of certain time losses.

[7] Some evidence in point is furnished by the Census of Manufactures for 1914, which shows that the percentage of all classified iron and steel products (from steel works and rolling mills) which in the form of ingots, blooms, billets, slabs, and bars (partly finished products) were not produced in the works where consumed, and consequently required reheating, has remained stationary for every census since 1899 (two years prior to the organization of the Steel Corporation). The percentage has fluctuated within a three-point range close to 25 per cent: 1899 — 25.7; 1904 — 27; 1909 — 24.1; 1914 — 25.3. Integration between the mines and the blast furnaces and between the blast furnaces and steel mills may have been advanced, but the census contains no data apposite.

[8] Bureau Report (1911), p. 83: "It is worth pointing out that the technical economies of integration were chiefly connected with combining and coördinating the successive stages of *manufacture*." (Italics mine.) Page 108: "So far, however, as the integration of manufacturing processes themselves were [*sic*] concerned, the advantages of such a system were probably about as fully realized by the larger and better equipped plants of some of the constituent concerns [as was possible of realization under the consolidation]." The Bureau Report immediately following the first of the above quotations mentions as a distinct class of economies from integration the savings of "profits" previously paid to others on materials purchased. Later the Bureau declares that the "economies" derived from this last source were the chief socio-economic advantages gained by the combination. It grants that the savings affected in this direction must have been considerable. The argument involves a kind

ties in the Pittsburgh district and in eastern Ohio,[9] though here some operative economies were made possible by a rearrangement of plant facilities. What joint ownership did produce and undoubtedly was expected to produce was, not economies in operation through closer integration to any substantial degree, but advantages in the marketing of products as the result of the diminution of the competition[10] confronting each constituent in its particular market area. In short, the corporation was expected to succeed not so much from the power which consolidation might give it to reduce costs as from the power which consolidation might give it to raise or maintain prices.

The International Harvester Company was not, like the Steel Corporation, a combination either of combinations or of integrations. It was a combination of five of the leading manufacturers of harvesting machinery[11] in 1902. Each of the constituent concerns had built up its own trade under conditions of rigorous competition. Though each possessed patent rights of more or less value,

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of specious reasoning that has become familiar of recent years in the attack on the existing distributive organization (particularly on middlemen). Either the raw materials were sold to the blast furnace operators at a fair competitive price prior to the organization of the corporation or they were disposed of under monopolistic conditions. If the former, it is not apparent how the combine could have reduced the costs of its materials to its blast furnaces without sacrificing something on the capital and managerial ability donated to getting out and transporting the raw materials, unless indeed the larger scale of these operations reduced somewhat the insurance costs or risk-profits incident thereto. If, on the other hand, the latter assumption be correct, which is very doubtful, it follows just as certainly that the acquisition or lease of these iron and coal mines and limestone quarries and shipping facilities could not have been made save upon terms that gave their prior owners the full discounted value of the calculable returns from these properties operated as a monopoly. Consequently the "profits" saved from the hands of the security holders of these mining companies became essential for meeting the demands for income from the holders of the securities of the combination. In whatever way they are regarded these particular "commercial economies" of integration evaporate in the rays of economic analysis.

9 BUREAU REPORT (1911), pp. 273–275.

10 *Ibid.*, p. 12: "A more important matter is that a period of violent competition among all of these concerns was imminent . . . and that the United States Steel Corporation was organized for the specific purpose of preventing the new competition thus threatened as well as eliminating that already existing among these concerns."

11 REPORT OF THE BUREAU OF CORPORATIONS ON THE INTERNATIONAL HARVESTER COMPANY (1911), pp. 46–50. These included all of the largest concerns favorably located for marketing their product in the Western and Middle Western states. The only competitor of formidable size was D. M. Osborne & Company, located in Auburn, New York. The plants of this company were purchased in 1903.

these were incidental advantages in the competition with the other manufacturers rather than the foundation of substantial monopoly for any single unit in the production of this class of machinery. After the expiration of the basic patents of the seventies, at least, no particular concern was especially favored by the exclusive right to use any special device or method.

The question of economic integration, therefore, was only of secondary significance in the formation of the combination. Only as the larger-scale purchasing of raw materials made feasible the acquisition of sources of these materials and the undertaking of their transformation through prior stages could economic integration have influenced the consolidation. To some extent this was done. But the company has not contended, nor do the facts indicate, that its position was made greatly more secure or that very considerable savings were effected in this direction. Its subsidiary iron and steel company, the Wisconsin Steel Company, has proved a profitable venture,[12] but this may fairly be attributed in part to fortunate ore investments, whence came considerable unearned increment, and in part also to the favorable situation created in the iron and steel industry by the formation of the United States Steel Corporation by the same banking interests responsible for the organization of the Harvester Company.

On the other hand, the Wisconsin Lumber Company, which is the subsidiary furnishing the other principal raw material of the implement industry, has not proven capable even of "paying its way" [13] for most of the period since its organization. So far as yielding technical economies in the manufacture of iron, steel, and wood into finished farm implements is concerned, however, there is not one bit of evidence that the use of these subsidiary companies has been an advantage to the International Harvester Company. Its process of production is just as long (in time) and requires as many steps as it would were it to supply itself with its requirements for these raw materials entirely from the general market, as it is

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[12] BUREAU REPORT, pp. 268–269. REPORT OF FED. TRADE COM. (1920), pp. 670–673. Assuming the quasi-monopolistic condition in the iron and steel industry to exist, as we shall attempt in this paper to demonstrate that it does, it is obvious that an industry which frees itself from the exactions of those in control of the supply of its primary raw material will benefit thereby.

[13] BUREAU REPORT, p. 270, and REPORT OF FED. TRADE COM. (1920), p. 673.

actually forced to do in part by technical considerations.[14] There remain the possible economies in production through the interchange of methods and designs, and the specialization of plant. The former, it must be admitted, could hardly fail to constitute somewhat of an economic gain wherever rival producers join forces. But manifestly the gain is temporary. And here, at least, the short-run gain is the long-run loss. Moreover, in an industry even so far stabilized as was the harvesting machinery industry in 1902, these advantages would hardly be sufficient to warrant the mere organization expenses of such a consolidation. The latter sort of productive economies, namely those arising from specialization of plant, are contingent upon the degree to which the limit of economy from large-scale production has been approached under competitive conditions. Considering the length of the period in which the tendency toward concentration of ownership had been manifesting itself in this industry, considering the size of the constituent concerns, and considering finally the extent to which this industry is affected by transportation costs, the principal factor determining the economic limit to large-scale production, it can scarcely be doubted that there was little to be gained in this direction from combination. This inference is confirmed by the actual course of events.[15] The substantial gains sought by consolidation consequently could only have been anticipated from the elimination of competition in the marketing of the product[16] of the industry.

It is significant that while the opinion of the leading executives in the several constituent concerns was unanimous that the competition preceding the consolidation was "fierce," "ruinous,"[17] *et cetera*, it was not producing any marked change in the relative standing[18] of these five largest manufacturers, nor was there apparent any distinct tendency for new investments to shun the field. It would seem rather difficult to explain why, in an industry so hampered by the "excess" of competition, the capital investment as appraised by promoters actively engaged in the business, who

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[14] BUREAU REPORT, pp. 253–254, 268.

[15] *Ibid.*, pp. 145–146. Three of the original five plants have continued their former line and in two the manufacture of harvesters was discontinued, but only upon the entrance into new lines of production some years after the consolidation. If anything, the tendency has been away from rather than toward a specialization of the use of plant equipment.

[16] *Ibid.*, pp. 3, 70.

[17] *Ibid.*, pp. 3, 59–62.

[18] *Ibid.*, pp. 63–66.

were attempting to launch a harvester trust a decade before, should have increased from $35,000,000 in 1890 to $132,000,000 in 1902. While $72,000,000 of this latter figure is mainly composed of good will and patent values,[19] the capitalization of the abortive American Harvester Company must have included something of these elements. Moreover, the 1890 valuation covers a much more comprehensive list of plants engaged in the industry than were brought within the consolidation in 1902. Of course the number of companies engaged in the manufacture of harvesting machines declined in the decade 1890–1900, as did the number of companies engaged in most other lines of manufacture. This tendency is generally attributed to the economy of large-scale manufacture and there seems no reason to differentiate the process qualitatively in this industry[20] from the same process manifesting itself elsewhere. In short, there is nothing in the experience of the concerns forming the harvester trust prior to the combination that demonstrates the failure of competition to do aught but what is expected of it by society, namely, maintain an expanding supply of product adjusted to the demand, reduce costs, and transmit the benefit of industrial action to the purchasing public at prices free of monopolistic elements.

The significant fact about the origin of these two trusts is that they were both formed by combination, not by independent, normal growth. At least in these industries there is no proof that a single competitor could win control of the market by his industrial superiority in an outright contest. Even Mr. Carnegie, whose visits to Pittsburgh it is said never failed to throw a chill into his competitors, was only the most formidable figure in the trade. In 1900 he controlled less than twenty per cent[21] of the steel output of the United States. The same was true[22] of the McCormick in-

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[19] These were not included in the ultimate capitalization of the International Harvester Company.

[20] The fact that there were but few failures of firms engaged in the manufacture of harvesters in a decade (Bur. Rep., p. 62), which witnessed an almost unexampled depression in the agricultural industry upon which the harvester industry is wholly based, is fairly conclusive evidence that the competition was not so "destructive" but that enterprises fairly well located and managed could survive.

[21] Bureau Report, Steel Industry, p. 87.

[22] Bureau Report, International Harvester Company, p. 65. The McCormicks controlled about 37 per cent of the country's output of binders in 1902.

terests in the harvesting industry. Whatever may have been the motive of those responsible for the organization of these dominant concerns it is clear that they were "made"; they did not "grow."

VII

The facts concerning the relations of these two trusts to other establishments in their respective industries are especially enlightening. There can be little doubt that they are the best examples which our experience affords of trusts endeavoring to maintain and advance their position by the fullest utilization of the legitimate advantages gained through combination, rather than by aggressive elimination of outside firms through uncompromising trade warfare. The latter policy was without an exception, so far as the writer has been able to discover, the policy embraced by the industrial combinations organized in the nineteenth century. Certainly it was the characteristic policy of all the older trusts.[23] But with the beginning of the new century we are introduced to the new policy of "live and let live — who can." The old policy toward so-called "independents" seems to have lost favor, if indeed it may not be conjectured that for certain farsighted financiers its futility in face of the public attitude had not already been proven. Certain it is that the United States Steel Corporation from its start and the International Harvester Company after a short period of experimenting have refrained from those bullying, bludgeoning tactics toward the smaller concerns in their industries which brought such opprobrium upon the tobacco trust and the cash-register trust. The government in its brief in the Harvester case [24] could establish no general malfeasance along this line. Aside from a few tentative efforts at suppression by local price-cutting, isolated instances of dealer-threatening, etc., in 1902–1904 the only evidence adduced of unfair competitive methods was that the trust had retained the five distinct selling organizations of its con-

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23 After the disclosures made by the Industrial Commission and by the courts in prosecutions under the Sherman Act it requires no more than a mention of such trusts as the following to call to mind the nefarious practices which place them within this class: The American Tobacco Co., The Standard Oil Co., Distillers' & Cattle-feeders' Trust, Addystone Pipe Combination, American Sugar Refining Co., National Wall Paper Company, and National Cash Register Company.

24 Parts IX and X, SEN. DOC., No. 558, 63d Congress, 2d Session.

stituents and adhered more closely than had formerly been the custom to the policy of making agency contracts exclusive. With respect to the first of these contentions, both of which had undoubtedly a factual basis, it may be strongly questioned that it constituted a ground of complaint for anyone. It is hard to understand how it prejudices the competitive opportunity of an "outsider" for a trust to employ ten salesmen instead of six. If ten is no more than can economically be employed to transact the business done, must the trust cripple itself in order to show its benevolence and fairness toward its small competitor? If ten is more than can economically be employed in transacting the business secured, how can their employment be other than a tremendous competitive opportunity to the small outsider? But the government hints that by this means all the best selling agents throughout the country were, so to speak, "monopolized" by the Harvester Company, thus depriving small competitors of good local representation.[25] Since when, it may be asked, have salesmen for agricultural machinery become so rare and so difficult to train? The existing supply of implement dealers in any year is not inelastic and certainly not irreplaceable. One might think from the argument of the government that farm machinery dealers were "born" and not "made," and "born" at that only at comparatively long intervals.

With regard to the other contention it is true that for certain goods, only to be marketed economically in conjunction with many other wares, the preëmption of the established channels of trade by exclusive factor agreements may constitute a serious aggression upon independent producers. It is difficult to understand, however, what objection there can be to local retail distributors of heavy, intricate, and expensive machinery of slow turnover agreeing to represent only a single manufacturer, or in this case only a single line of implements. The cost of distribution is bound to be large and the manufacturer would seem to be justified in taking the greatest precaution (as the exclusive agency contract does) to

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[25] It is to be granted, of course, that the company would have created a very severe test for itself in its "trial period" by abruptly severing its connections with, say, 65 per cent or 70 per cent of the dealers previously engaged in distributing the products of its members. A great many of these would have made strong efforts to establish connections with outside manufacturers and could unquestionably have carried with them a large part of the trade they had previously enjoyed.

assure that every "outlet" for his product is fully cultivated. This method of distribution is almost universal for this class of goods, it had been the common practice in the marketing of harvesting machinery before the consolidation, and there appears no reason for believing that it operated to cripple the "outside" manufacturers in efforts to extend their market and increase their sales.[26]

We come, then, to the question: What has been the record of trust accomplishment under the "live and let live — who can" policy? Have these trusts, conducted we may assume with moderation and fairness toward the "independent" competitors, proved their "fitness to survive" and justified their sponsors? The answer is yes, and no. They have not been reduced to bankruptcy. They have made profits.[27] They continue to "lead the field" in their respective industries. Nevertheless they have not been able to "hold their own" in the trade. Both have "lost ground" to outside competition, notwithstanding what may be deemed fairly able management; this despite their vaunted economies in manufacture and marketing.

The tendency for the trusts to fall behind the small competitors in the rate of increase of production and of sales is not equally manifest in both industries, nor is the same tale to be told in both domestic and foreign trade, nor in relation to all of the products in the two industries. Some of these differences and the reservations they require will be made clear by an examination of the subjoined tables. The general conclusion reached above, however, is also well supported.

Percentages of total United States production made by The International Harvester Company and by other companies of three representative products of the original line of International Harvester

[26] Nevertheless this is made one of the prominent "concessions" secured by the Attorney-General in the consent decree of November, 1918. The manifest ease of evading this requirement, coupled with its insignificance in this industry, only help along the conviction one gains from studying the other provisions of the decree that the whole deal was a fiasco.

[27] For a survey of the profitableness of industrial trusts, see article, "A Statistical Test of the Success of Consolidations," by A. S. Dewing, 36 QUART. JOUR. OF ECONOMICS, p. 84. The lack of "success" of trusts there exhibited tends to confirm the argument in this section.

Company for the first full year of operation of the International Harvester Company, and for certain subsequent years:

(From Bureau Report on International Harvester Company and Federal Trade Commission Report on Farm Machinery.)

	1903		1909		1918	
	Int.	Ind.	Int.	Ind.	Int.	Ind.
Binders	94.2	5.8	87.1	12.9	65.3	34.7
Mowers	87.7	12.3	80.7	19.3	59.5	40.5
Rakes	80.	20.	69.1	30.9	57.5	42.5

Percentages of total United States production of certain selected products produced by the United States Steel Corporation and by other companies for specified years:

(From Annual Statistical Reports of American Iron and Steel Inst.)

	1902		1910		1914		1920	
	U. S. S.	Ind.	U. S. S.	Ind.	U. S. S.	Ind.	U. S. S.	Ind.
Pig iron	44.3	55.7	43.	57.	43.	57.	39.3	60.7
Steel ingots and castings	65.7	34.3	54.7	45.3	50.3	49.7	45.7	54.3
Bess steel rails	65.4	34.6	60.2	39.8	50.6*	49.4	58.*	42.
Plates and sheets	59.4	40.6	48.	52.	42.8	57.2	39.8	60.2
Wire rods	71.5	28.5	67.3	32.7	56.9	43.1	56.	44.

* Percentage of total production of steel rails by all processes.

The persistent tendency which these figures disclose strongly indicates, when taken in conjunction with the "live and let live — who can" policy pursued toward independent competitors, that the size and power of these combinations rest upon something different from economic superiority. It shows that the outside companies have been either taking away from the combination the business that formerly went to it, or in the case of the steel in-

dustry getting more of the new business than the combination could attract, and there is no reason for believing that this has been brought about by other than economic causes. We have seen that the circumstances of their origin support the conclusion that they were not the products of natural industrial development. But even if this be not granted,[28] certainly their histories as producers point to the view that they were both the result of financial conspiracy.

VIII

In endeavoring to measure the economic effect of these combinations upon the consuming public who directly or indirectly contribute to the purchase of their products one is confronted at the outset with a most difficult problem. How are their economic consequences to be gauged? What method, if any, will lead us to an unassailable verdict on this most crucial issue of all,— the course of prices for their products? But if they have risen, so have prices in general; and if they have risen more or less than prices in general, either result may be explained by hypotheses about relative changes in demand or conditions of supply, the legitimate effects of which it is impossible even approximately to ascertain. May the verdict then be rested on their rates[29] of profit? But high profitableness is not *per se* condemnable. An active, expanding enterprise under freest competition may be making profits much above the ordinary, and yet from the social point of view no less than the private be clearly entitled to them.[30] High profits may be either earned[31] or unearned. On the other hand, low profits may accompany the most favored monopoly, if it be managed with ineptitude or carelessness, as the history of more

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[28] There is not the slightest inclination, however, to minimize the evidence here reviewed as to the nature of the motives which induced their organization.

[29] "Rate of profit" is here and in following pages used in accordance with market terminology, *viz.*, the rate of return upon both risk-bearing and risk-exempt capital considered together, *i.e.*, the ratio of net earnings to total capital investment.

[30] A good example of what the present writer feels to be a rather uncritical use of price and profits data is furnished by a chapter on the International Harvester Company in JONES, THE TRUST PROBLEM IN THE UNITED STATES.

[31] As Mr., now Justice, Brandeis declared in 1911 before the Senate Committee on Interstate Commerce (HEARING, p. 1245): "There is no profit too great to be approved, if it is the result of the exercise of brains and character, under conditions of industrial liberty." Quoted by A. M. Kales, 30 HARV. L. REV. 862.

than one patented monopoly attests. Moderate profits are no unfailing criterion of reasonable social service in industry.

There is, indeed, no well-defined and reliable method of determining the social effects of industrial combination. Even more, the writer after some years of experience in pursuing and studying such inquiries is not only wary but skeptical of the "inductive proof" of the workings of social arrangements.[32] These problems are far too complex, certainly, to be solved by any such facile and simple expedients as were projected above and as are commonly employed. The provision of a technique for this sort of study is one of the pressing needs [33] yet unfilled by professional economists. What is needed is an exhaustive survey of alternative methods, and an analysis of their assumptions, their range of applicability, and their legitimate objectives. All this is quite beyond the scope of the present paper. But in attempting to get at a serviceable test of the direct economic consequences of the organization of the two combinations under review it is hoped to exhibit some of the pitfalls that must be avoided as well as some of the means of circumventing them.

There are two main lines of procedure from which to choose in any given instance. One may be styled direct, inasmuch as the record of the industrial combination itself is examined with a view to determine its service from its prices or its profits. The other may be termed indirect, since the effort is made to determine the status of the combination by comparing the condition of the industry as a whole in different periods and with other industries. The first mode of procedure requires the determination of (*a*) the extent of the capital investment employed by the combination; (*b*) the amount of earnings for successive periods; (*c*) the grade of executive ability engaged in the conduct of the business; (*d*) the degree of risk in the industry (*e.g.*, susceptibility to sudden changes in productive processes or in relative demand for products). The second mode of procedure requires the determination of (*a*) the gross pecuniary productivity of the industry during a series of years; (*b*) the proportion of earnings of capital to gross pecuniary

[32] For example, what have been the effects of prohibition? the Versailles Treaty? the federal operation of the railroads?

[33] The want, moreover, is not confined to our own country. No more has been done elsewhere. *Cf.* MARSHALL, INDUSTRY AND TRADE, chaps. II, VII, *et passim*.

productivity, also during a series of years; (*c*) like data for other representative industries; (*d*) the specific causes for the changes of proportion out of the many conditions potentially effective. The International Harvester Company, for reasons that will become evident, appeared more amenable to the first method of treatment, whereas this procedure was clearly ill adapted for the United States Steel Corporation and resort was consequently had to the indirect method.

For the value of the properties transferred to the International Harvester Company, we may rely on the Bureau of Corporations Report (1911) and the accounts of the company. The determination of the capital investment of the concerns entering the harvester trust was relatively an easy matter, since the assets consisted chiefly of replaceable plants and good will was excluded [34] in the actual capitalization of the company. Consequently the discrepancies between the valuation of the properties of the company by the Bureau and by the company itself were minor. The same may be said of the net profits of the company.[35] The Bureau found no substantial understatement of earnings; in fact, for the period covered by the Report of the Bureau (the first nine and one-fourth years of operation), the statement of earnings published by the company was only 0.57 per cent less than the computation made by the Bureau. Such discrepancy as results in the *rate* of earnings of the company as computed by itself and by the Bureau would be practically eliminated, moreover, if proper account were taken of the change in the "value of the dollar." There is no defense for continuing to use original investment rather than replacement value (minus depreciation, plus betterments) as the basis for determining the rate of profits. Under the pecuniary organization of a private-enterprise system there is no ground either in equity or expediency for the reckoning of the investment in replaceable capital in 1911 in terms of the "larger" 1902 dollar while the earnings in the later years are in terms of the "smaller" dollar of those years.

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[34] This, it may be noted, is not inconsistent with the statement, *supra*, in which reference was made to the proposed valuation of good will by the promoters.

[35] BUREAU REPORT, chaps. III and V.

Consequently there is little reason for believing that the picture of the profitableness of the International Harvester Company presented in the following table is other than a reasonably true representation of actual conditions.

1903 — [36]	1909 — 13.4	1915 — 7.8
1904 — 5.3	1910 — 12.7	1916 — 10.6
1905 — 7.0	1911 — 11.5	1917 — 18.5
1906 — 6.7	1912 — 10.5 [37]	1918 — 19.5
1907 — 7.3	1913 — 10.6	
1908 — 8.7	1914 — 7.6	

It is evident that the profits of the company have been moderate, *i.e.*, substantially on a competitive level. But this fact means nothing at all unless considered with reference to the degree of risk involved in the manufacturing operations of this industry, and with reference to the grade of executive capacity evinced by the responsible management of the enterprise. We have had very little investigation of the risks connected with various industries, but a cursory examination of the salient facts about the farm machinery [38] industry will convince anyone that the hazards of the industry are relatively small. Its products are non-perishable. Their demand is not subject to fashion or style influences. Their market is extremely broad, being in fact, even for relatively small concerns, international. And most important of all, the principal kinds of machines have been free from radical improvements for over a quarter of a century now. Indeed, it may be said to be rather singular that a group of products of this character—fairly intricate machinery (many traversing parts), fairly bulky, indelicate, and requiring only approximate precision, and thus well-adapted to mass production by machine methods — should have become so stabilized both in structure and in processes of production.

[36] For reasons for omitting the first fifteen months of operation from this table, see BUREAU REPORT, p. 233.

[37] The figure for 1912 was taken from the report of the company after making certain corrections corresponding to those made by the Bureau in prior years. The rates shown for the years 1913–1918 are those given by the Federal Trade Commission in its Report on THE CAUSES OF HIGH PRICES OF FARM IMPLEMENTS, p. 103. The foreign business was in the hands of the International Harvester Corporation after 1913, but the results of the operations of both companies are here consolidated.

[38] The business of the International Harvester Company has expanded into this complete line since its organization, and this fact will be referred to again later on.

In regard to the executive ability of the management of the Harvester Company, it seems permissible to base a judgment upon an examination of the record of its component elements under the preceding period of competition. This is legitimate here, since no considerable changes occurred in management personnel or organization by the formation of the Harvester Company.[39] Its legitimacy is still further strengthened by the fact that in this case the owners of the constituent properties forming the combination retained as a group the financial control,[40] which has enabled them to continue to exercise the essential entrepreneurial function of choosing the responsible executive heads. For present purposes and considering the available data, the varying grades of administrative ability may be arranged in the simple scale — inferior, normal, superior.

Of the several organizations brought into the International Harvester Company, there can be little doubt that the most efficient [41] was the McCormick organization. But the Deering concern was also aggressively and successfully managed. These two had been steadily growing and improving their position in the industry relative to all other units. Their executive heads had evinced an administrative capacity that may reasonably be classed as of a superior order. But the experience of the Champion, Milwaukee, and Plano organizations [42] under severe competition had not been such as to indicate high managerial efficiency. If then it be concluded that the combination included elements of supra-normal and inferior executive capacity, as the available facts seem to indicate,[43] it is clear that the company as a whole was not blessed by an exceptional management at the start. This fact must be considered, also, in conjunction with the further fact of the handicap suffered by the company in early years from petty jealousies, family pride, nepotism, and such influences inimical to efficiency. Later,

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[39] REPORT OF BUREAU OF CORPORATIONS (1911), pp. 87–88.

[40] It may be noted that neither of these conditions obtained in the organization of the United States Steel Corporation.

[41] Most efficient, that is, for profit-making. That is the only sensible standard to apply in our society.

[42] The subsequent purchase of the properties of D. M. Osborne & Company was made on terms which changed the responsible management, and also gave the former stockholders no interest in the Harvester Company. REPORT OF BUREAU, pp. 137–139.

[43] *Ibid.*, pp. 156–160.

however, this seems to have been overcome to a degree through insistence from the financial control, referred to in the preceding paragraph.

From the foregoing it may be concluded that the moderate but growing profits obtained by the International Harvester Company have been made possible by a fair average grade of administrative efficiency in its management. Accordingly it would seem that no great influence detrimental to the public interest has been made out, so far as the character of the price policy of the company is deducible from its profits record. Such is indeed the case. But it was not to have been expected that the rate of profits for either of these combinations pursuing the "live and let live — who can" policy would be extremely high. Moreover, this company since its formation has sought to expand its control over the entire agricultural implement industry, rather than exploit to the full the advantages of its commanding position in that section of the industry which gave birth to it. Thus it has from the first maintained a vigorous competition in one branch of the industry after another, and often in several at once, as it extended the scope of its operations. In these new lines of production it has been content, and sometimes for long periods has been forced, to accept extremely low profits in order to push ahead toward its ultimate goal. This policy of expansion, though, has not by any means necessitated the sacrifice of the possibility of securing high profits on the original lines. It may well have served, on the other hand, to cover up such possibly high profits, since the figures given above make no differentiation between the results of its activities in what may be tentatively termed the "controlled lines" and the "competitive lines." It is extremely doubtful whether such differentiation could accurately be made,[44] for the elements of cost jointly incurred are considerable in view of the policy pursued of maintaining several distinct complete-line organizations and non-specialization of plants.[45]

On account of the large proportion of irreplaceable and non-duplicable mineral rights and site values in the property invest-

[44] Though the company attempts it for its own administrative purposes.

[45] Different implements of each line are made in a single plant, as a rule. The Milwaukee plant is "specialized" only in so far as its output is confined to gas engines, cream separators, etc., which have no relation to field crops.

ment of the United States Steel Corporation it is not practicable[46] to attempt any calculation of the rate of profit of this concern. But if the course of development of this industry as a whole exhibits signs of the repressive effect of monopolistic influences, there will be no need of searching far for their source. For data upon the progress of the entire industry, the reports of the Census of Manufactures will be depended upon. The invested capital figures given in these reports are wholly unserviceable for any purpose, as the Bureau of the Census itself warns. The figures for "value added to product" are fairly accurate, and for the successive census years since 1899, at least, are fairly comparable, while those of 1889 have fortunately been adjusted to correspond with the later figures. The figures upon "wages paid" are also fairly dependable. A major difficulty, however, is that the classification of industries adopted by the Census Bureau does not coincide and cannot be arranged to coincide with the full range of activities of the Steel Corporation. It is only on an arbitrary basis that different branches of the business of the corporation may be divided and separately treated; and consequently the returns compiled by the Census Bureau rest in part only on objective market facts. Two branches only of the iron and steel industry will be analyzed.

If from the "value added to product" (which is comparable to the "gross income" of a single enterprise, less all "expenses" except wages) there be deducted the wages paid, the remainder constitutes the income upon capital, save for deductions for taxes. Now, it is clear that in any advancing industry, the percentage which return to capital forms of "value added" will be steadily mounting, assuming no change in relative tax burden or in the normal rate of interest upon capital. The reason is that technological improvements "save labor,"[47] and thus reduce the share of the joint product attributable to its coöperation. The tendency set up by this influence might be accelerated by the establishment of a monopoly and its vigorous, unbridled exploitation. But such an

[46] The discrepancy between the Bureau's figures for this essential item in 1902 and the corporation's figures amounted to nearly half of the total capitalization of the corporation, namely $600,000,000.

[47] It is sometimes said that technological improvements of a certain kind "save time"; but that is only another way of expressing the same thing. . . . It is ultimately reducible to "labor saving," taking the industrial process as a whole.

influence could not in any case be of more than secondary significance as compared to such a decisive influence as the state of technology, much less if the "live and let live — who can" policy be the one pursued by a combination that is only *quasi*-monopolistic in point of ultimate and possibly, also, actual power. Likewise the tendency toward an increase in the percentage consequent upon improving technology might be offset by the growth of a powerful labor organization within the industry. At best this influence could only affect the percentage decimally, and no one conversant with labor conditions in the steel industry would assign to the influence any potency whatever there.

The following table gives the percentages of return to capital to value added to product in several different industries for certain census years:

Year	Blast Furnaces	Steel Mills	Auto-mobile	Boots and Shoes	Flour Mills
1889	58.9	35.6	...	...	...
1899	75.6	50.5	39.0	35.4	77.8
1904	64.3	47.4	58.8	43.8	78.8
1909	65.3	50.3	61.5	44.1	81.5
1914	57.2	42.7	68.3	44.8	80.4
1919	...	...	...	...	...

The large increase of the percentages in two branches of the steel industry in the decade 1889–1899 stands in sharp contrast to the decline since the organization of the Steel Corporation. The effect of free competition in a new industry is strikingly brought out by the course of the percentage in the automobile industry. The development and refinement of the machine process in this industry is well known. The data for flour-milling indicate a steady though not considerable or uninterrupted improvement in this industry which has long been practically automatic. The technological progress in the boot and shoe industry which made it one of the notable examples of the transformation of American industries in the latter part of the nineteenth century appears to have slowed down markedly shortly after the organization of the United Shoe Machinery Company.

Concerning the influences responsible for the decline in the percentages, which are either not observable or not appreciable in the

industries other than iron and steel, there is matter for interesting speculation. The decline can hardly be assigned to technological retrogression. Modern industry has no "lost arts," though it undoubtedly has a few suppressed patents. The business cycle, however, may be held accountable for some part of the declines. It is beyond question that wages constitute a greater share of the gross income of a manufacturing enterprise during depression than during prosperity, other things being equal. This is due to the fact that wages "resist" liquidation more tenaciously than other price categories.[48] A more important factor would seem to be the arbitrary manner in which the value of materials used is determined upon in a large section of both of the given branches of the iron and steel industry. When materials used are not purchased in the open market but are taken over from a preceding process, representing a separate industry in the census classification, but only another department of the operations of an integrated enterprise, their price is determined solely by the accounting policy of the concern, and that is a shifting, arbitrary thing. Consequently the change in "value added to product" may be taken out of all its fundamental economic relation to change in the wages paid by the simple device of making the "value of materials used" either a greater or a less proportion of "total value of products." There are good grounds for believing that the Steel Corporation which represents a large section of both these branches of the industry has chosen to make its principal profits appear in the operation of its raw material properties. The concentrated holding of mines, ore leases, coking coal lands, etc., coupled with the natural limitation upon the supply (which in any case with the progressive using up of exhaustible resources would have persistently forced up their prices), have enabled the prices of iron ore and coking coal to be advanced, it may be presumed, to levels which would make the return upon capital invested in the blast furnace and steel works and rolling mills below the competitive rate were it not for the fact that a large section of these branches of the industry is "supported" by the more lucrative returns elsewhere gained by the same enterprises. There is a clear presumption of this from the fact of the

[48] It would still remain to be explained, however, why the countervailing forces were so much stronger than this in the automobile and shoe industries and so much weaker in the iron and steel industry.

decline in percentages noted above, in the absence of any evidence of such a technological improvement as dispenses with the need of considerable capital equipment in these particular branches of the industry. The foregoing argument presents the most plausible hypothesis, it seems to the present writer, for the explanation of the persistent decline in the percentages of return upon capital to "value added to product" in these branches of iron and steel manufacture.

It is to be recognized, of course, that this evidence is not conclusive regarding the state of the industrial arts in the iron and steel industry as a whole. And it is only by inference that the tendency the data reveal can be ascribed to the organization of the United States Steel Corporation. Nevertheless there does not appear to have been any outstanding technological advance in the process of steel making in the last two decades,[49] and the inference seems altogether fair and reasonable that this slowing up of progress, in which the public has such a vital concern, is in part due to the repressive and inhibitive forces which monopoly exerts by the fact and to the extent of its existence. The failure to reach a clear and decisive issue to our inquiry along this line, though there is no intention to minimize its probative force, only goes to confirm the position taken in the first paper of this series. There it was maintained that the attempt to apply the "rule of reason," while abstractly it may seem quite sound and justifiable, concretely encounters such obstacles as to make its adoption as a general rule of social policy perilous to the public interest. That position is vindicated by the investigation in this second paper. While it may not be possible by inductive argument to establish conclusively the balance of net social disadvantage against the new policy, when the evidence of the facts tends strongly to support that view and deductive pre-

[49] Three developments may be mentioned: the utilization of lower grades of iron ore, the substitution of by-product for beehive coke ovens, and the installation of electric steel plants. The first and second have been made possible by the advance of metallurgical and chemical science, in large part independent of the encouragement of industry, and the steel industry in the United States was even tardier than its European competitors in adopting the by-product process. The United States Steel Corporation is entitled to no credit for originating or perfecting electric steel making. The manufacture of steel in electric furnaces has had a phenomenal growth here in the last ten years, however, and its ultimate significance cannot now be safely foretold. See Annual Reviews published in the first week of each calendar year by the IRON AGE; THORPE'S DICTIONARY OF APPLIED CHEMISTRY, Vol. II, p. 103; also J. N. PRING, THE ELECTRIC FURNACE, § 11.

sumption[50] as well as instinctive reaction buttress the same view, the conclusion appears well founded. Since the possibility of benefit is so meager[51] and the risks are so great, particularly when long run considerations are in view, the public interest certainly lies in a repudiation of the experimental policy.

IX

In summary, the first section of this paper tended to establish the fact that these combinations were the artificial product of business conspiracy, not the outgrowth of the selective and adaptive evolution of industrial organization. The second section tended to prove that these combinations thus originating were incapable of maintaining their position in the face of unhindered competition, pointing to the conclusion that when the power of preponderant combinations in manufacturing industries is not used ruthlessly their size is a handicap as against the vigor and versatility of smaller rivals. And in the third section the argument tended to demonstrate the adverse effect upon the public from high, if not exorbitant, prices and from retarded technological progress of these huge consolidations of interests approaching monopoly within their respective industries. There is nothing inconsistent, it should be unnecessary to explain, between the outcome of these several lines of inquiry, particularly between the second and third. When a preponderant part of the production in a particular industry is under one control, smaller concerns may frequently take advantage of the prices set by the big business rather than risk extermination

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[50] Against the control of the supply of a product by private combination.

[51] I cannot forbear quoting, somewhat in the authoritarian manner in which lawyers were wont formerly to bring in selections from Bracton or Coke or Blackstone or Cooley, a statement of the dean of my own profession, Dr. Alfred Marshall:

"Experience shows ever more and more that the technical economy to be obtained by piling Pelion on Ossa in the agglomeration of vast business is nearly always less than was expected, and that the difficulty of the human element ever increases with increasing size. Much can be done by various schemes of reward and promotion as regards junior officials, and even the superior officials are stimulated by congresses and other opportunities for submitting their new ideas to the judgment of brother experts. But no fairly good substitute has been found, or seems likely to be found, for the bracing fresh air which a strong man with a chivalrous yearning for leadership draws into his lungs when he sets out on a business experiment at his own risk." Address before the Royal Economic Society, January 9, 1907, printed in 17 ECONOMIC JOUR. 17.

in straight out competition. The so-called "independents" become then only *quasi*-competitors. Under such circumstances the big business may feel constrained to fix its prices only moderately high. This clearly tends toward a lethargic if not stagnant condition in the whole industry, notwithstanding reasonable-plus profits. And in spite of its underlying economic weakness the industrial *quasi*-monopoly, putatively so powerful merely on account of its overtowering size, may retain a considerable part of its power over a generation or more, to the appreciable, if not directly demonstrable, detriment of the public interest. This is the writer's view of our experience with the steel trust and the harvester trust, and if this view is a just one and if the experience in these cases is typical, it points to the vindication of the common-law attitude toward combinations in restraint of trade and monopolies as declared in the Sherman Act and originally enforced thereunder.

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